

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

see form PCT/ISA/220

PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/CH2005/000137

International filing date (day/month/year)
07.03.2005

Priority date (day/month/year)
15.03.2004

International Patent Classification (IPC) or both national classification and IPC
C07D307/04, C07D307/28

Applicant
GIVAUDAN SA

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/CH2005/000137

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material:
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing:
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/CH2005/000137

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	3-7
	No: Claims	1,2
Inventive step (IS)	Yes: Claims	3-7
	No: Claims	1,2
Industrial applicability (IA)	Yes: Claims	1-7
	No: Claims	

2. Citations and explanations

see separate sheet

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

D1: DATABASE CAPLUS [Online] CHEMICAL ABSTRACTS SERVICE,
COLUMBUS, OHIO, US; 22 April 2001 (2001-04-22), XP002337262 retrieved
from STN Database accession no. 1963:408398

D2: US-A-4 336 197 (FANKHAUSER ET AL) 22 June 1982 (1982-06-22)

Novelty

The document D1 discloses 2-isopentyl-2,5-dimethyltetrahydrofuran which can be obtained from halogenated alkane precursors.

The document D2 discloses spiro derivatives of 2-methyldihydrofuran and their use as sulfur-free odourants (see column 1, Formula (I); column 1, lines 60, 61; column 2, lines 55-58; column 3, lines 4-6).

In view of D1, the ISA fails at present to acknowledge novelty for the subject-matter of present independent claim 1 and present dependent claim 2.

Inventive step

D2 is deemed the closest prior art for the remaining novel subject-matter, namely compounds of Formula (I) other than 2-isopentyl-2,5-dimethyltetrahydrofuran.

The distinguishing feature between the said novel subject-matter and D2 is the particular structure of the compounds of D1, namely 2-methyldihydrofuran having 2 (cyclo)alkyl substituents at position 5 *in lieu* of the spiro-condensed cyclohexene.

In the absence of any evidence for an unexpected technical effect linked to this feature, the objective problem underlying the said novel subject-matter can be regarded as the provision of further sulfur-free odourants.

The claimed solution to this very general problem was the modification of the spiro compounds of D2 by "opening" the spiro substituent in order to arrive at the present 2 (cyclo)alkyl substituents at position 5.

However, since the said solution was not derivable from the prior art on file, the presence of inventive step has to be acknowledged for the above-defined novel subject-matter, even in the absence of a technical effect.

Re Item VIII

Certain observations on the international application

"Mono- or disubstituted" (claim 1) lacks clarity.